WHAT IS CLAIMED IS:

1. A composition comprising
   (a) a viable human neonatal or fetal hematopoietic stem cell;
   (b) a second neonatal or fetal blood cell; and
   (c) cryopreservative.

2. The composition of claim 1 which further comprises a viable human neonatal or fetal hematopoietic progenitor cell.

3. The composition of claim 1 which further comprises whole neonatal or fetal blood.

4. The composition of claim 1 which further comprises an anticoagulent.

5. The composition of claim 1, 2, 3 or 4 in which the cryopreservative comprises dimethyl sulfoxide.

6. The composition of claim 1 in which the hematopoietic stem cell is characterized by the ability to produce a progeny cell which can produce a colony of granulocyte, erythroid, monocyte, or macrophage progeny in vitro.

7. The composition of claim 2 in which the progenitor cell is characterized by the ability to produce a colony of granulocyte, erythroid, monocyte, or macrophage progeny in vitro.

8. The composition of claim 1 in which the hematopoietic stem cell is characterized by the ability to seed to a spleen and produce a colony of progeny cells, upon introduction into a mammal.

9. The composition of claim 1 in which the hematopoietic stem cell is characterized by the ability to reconstitute the hematopoietic system of a host into which it is introduced.

10. A recombinant stem or progenitor cell comprising a human neonatal or fetal hematopoietic stem or progenitor cell in which a heterologous gene sequence is stably incorporated, which cell is capable of generating a progeny cell which expresses the heterologous gene sequence.

11. The stem or progenitor cell of claim 10 in which the heterologous gene sequence comprises a sequence encoding hemoglobin.

12. The stem or progenitor cell of claim 10 in which the heterologous gene sequence is expressed as a nucleic acid sequence that is complementary to and can hybridize to a nucleic acid of a pathogenic microorganism.

13. The stem or progenitor cell of claim 12 in which the pathogenic microorganism is Human Immunodeficiency Virus.

14. A method for obtaining human neonatal or fetal hematopoietic stem or progenitor cells comprising:

(a) isolating human neonatal or fetal blood components containing hematopoietic stem or progenitor cells;

(b) cryopreserving the blood components; and

(c) thawing the blood components,

such that the stem or progenitor cells are viable.

15. The method according to claim 14 further comprising the step after (c) of removing a cryopreservative.

16. The method according to claim 14 further comprising the step of growing the stem or progenitor cells in vitro.

17. The method according to claim 14 further comprising the step of enriching for stem and progenitor cells by a cell-separation procedure.

18. The method according to claim 14 in which the blood components comprise whole blood.

19. The method according to claim 14 or 18 in which the blood components are isolated by collection from an umbilical cord.

20. The method according to claim 14 or 18 in which the blood components are isolated by collection from a placenta.

21. The method according to claim 14 or 18 in which the blood components are isolated by collection from both an umbilical cord and a placenta of the same individual.

22. The method according to claim 14 in which the cryopreservation is by use of a cryoprotective agent.

23. The method according to claim 22 in which the cryoprotective agent comprises dimethyl sulfoxide.

24. The method according to claim 14 in which the cryopreservation is by use of liquid nitrogen.

25. The method according to claim 22 in which the cryopreservation further comprises the use of liquid nitrogen.

26. A method for hematopoietic or immune reconstitution of a human comprising:

(a) isolating human neonatal or fetal blood components containing hematopoietic stem or progenitor cells;

(b) cryopreserving the blood components;

(c) thawing the blood components; and

(d) introducing the blood components into a suitable host,

such that the hematopoietic stem or progenitor cells are viable and can proliferate within the host.

27. The method according to claim 26 in which the stem and progenitor cells are autologous to the host.

28. The method according to claim 26 in which the stem and progenitor cells are syngeneic to the host.

29. The method according to claim 26 in which the stem and progenitor cells are allogeneic to the host.

30. The method according to claim 29 in which the host has Fanconi's anemia.

31. The method according to claim 26 in which the blood components comprise whole blood.

32. The method according to claim 26 in which the blood components are isolated by collection from an umbilical cord.

33. The method according to claim 26 in which the blood components are isolated by collection from a placenta.

34. The method according to claim 26 in which the host is immunodeficient.

35. The method according to claim 34 in which the immunodeficiency is by reason of irradiation.

36. The method according to claim 34 in which the immunodeficiency is by reason of chemotherapy.

37. The method according to claim 34 in which the immunodeficiency is by reason of infection by a pathogenic microorganism.

38. The method according to claim 34 in which the host has a malignant solid tumor.

39. The method according to claim 26 in which the host has anemia.

40. The method according to claim 39 in which the host has Fanconi's anemia.

41. The method according to claim 26 in which the host has a hyperproliferative stem cell disorder.

42. The method according to claim 26 in which the host has a hematopoietic malignancy.

43. The method according to claim 42 in which the hematopoietic malignancy is a leukemia.

44. The method according to claim 42 in which the hematopoietic malignancy is a lymphoma.

45. The method according to claim 26 in which the host has an autoimmune disease.

46. The method according to claim 26 in which the host has a hemolytic disorder.

47. The method according to claim 26 in which the host has a genetic disorder.

48. The method according to claim 47 in which the genetic disorder is Fanconi's anemia.

49. The method according to claim 26 which further comprises, after step (a) or step (c), introducing a heterologous gene sequence into the stem or progenitor cells, which gene sequence is stably incorporated and capable of expression by progeny of the stem or progenitor cells.

50. The method according to claim 49 in which the host has a genetic disorder.

51. The method according to claim 50 in which the heterologous gene sequence comprises a sequence encoding hemoglobin.

52. The method according to claim 50 in which the host has thalassemia.

53. The method according to claim 50 in which the host has sickle cell disease.

54. The method according to claim 50 in which the host has anemia.

55. The method according to claim 49 in which the host is immunodeficient.

56. The method according to claim 55 in which the immunodeficiency is by reason of infection by a pathogenic microorganism.

57. The method according to claim 49 in which the host is infected by a pathogenic microorganism, and in which the heterologous gene sequence is expressed as a product which is toxic to the pathogenic microorganism without significant detriment to the host.

58. The method according to claim 49 in which the heterologous gene sequence is expressed as a nucleic acid sequence that is complementary to and can hybridize to a nucleic acid of a pathogenic microorganism.

59. The method according to claim 58 in which the pathogenic microorganism is Human Immunodeficiency Virus.

Sub B

add E4

Add F1